Claims

1. A thrust bearing assembly comprising:

a retainer cage;

a plurality of roller retaining pockets spaced about the retainer cage, at least one of the pockets being an angled pocket having a radial axis that is non-parallel relative to a retainer cage centerline passing through the angled pocket;

a plurality of rollers positioned in respective pockets.

2. The thrust bearing assembly of claim 1 wherein each roller retaining pocket is an angled pocket.

3. The thrust bearing assembly of claim 1 wherein a roller is positioned in each roller retaining pocket.

4. The thrust bearing assembly of claim 1 wherein the angled pocket radial axis is at an angle of approximately 30° relative to the retainer cage centerline passing through the angled pocket.

5. The thrust bearing assembly of claim 1 wherein the angled pocket radial axis is at an angle between 15° and 30° relative to the retainer cage centerline passing through the angled pocket.

6. The thrust bearing assembly of claim 1 wherein the angled pocket radial axis is at an angle between 30° and 45° relative to the retainer cage centerline passing through the angled pocket.

7. The thrust bearing assembly of claim 1 wherein the retainer cage includes two opposed interconnected members with the roller retaining pockets extending through both members.

8. The thrust bearing assembly of claim 1 wherein the retainer cage has a sigma configuration.

9. The thrust bearing assembly of claim 1 wherein the thrust bearing assembly is associated with a cam locking assembly that is rotatable in a locking direction and an unlocking direction and the angled pocket has an inner radial edge and an outer radial edge, the angled pocket being angled such that the inner radial edge trails in the outer radial edge as the cam locking assembly is rotated in the unlocking direction.

10. The thrust bearing assembly of claim 1 wherein the thrust bearing assembly is associated with a cam locking assembly that is rotatable in a locking direction and an unlocking direction and the angled pocket has an inner radial edge and an outer radial edge, the angled pocket being angled such that the outer radial edge trails in the inner radial edge as the cam locking assembly is rotated in the unlocking direction.

11. The thrust bearing assembly of claim 10 wherein the angled pocket is narrow adjacent the outer radial edge than adjacent the inner radial edge.

12. The thrust bearing assembly of claim 11 wherein the angled pocket has at least one tapered side adjacent the outer radial edge.

13. The thrust bearing assembly of claim 12 wherein the angled pocket has opposed tapered sides adjacent the outer radial edge to define a tapered area adjacent the outer radial edge.

14. The thrust bearing assembly of claim 13 wherein the roller positioned in the angled pocket has a radial length less than the distance between the angled pocket inner radial edge and the tapered area.

15. The thrust bearing assembly of claim 11 wherein the roller moves in to the tapered area as the cam locking assembly is rotated in the unlocking direction such that the angled pocket causes a friction force on the roller.

16. The thrust bearing assembly of claim 15 wherein the cam locking assembly experiences a snap-back force as the cam locking assembly is rotated in the unlocking direction and wherein the at least one angled pocket causes a drag force on the respective roller, the drag force and friction force counter-balancing the snap-back force.

17. The thrust bearing assembly of claim 1 wherein the thrust bearing assembly is associated with a cam locking assembly that is rotatable in a locking direction and an unlocking direction, the cam locking assembly experiencing a snap-back force as the cam locking assembly is rotated in the unlocking direction and wherein the at least one angled pocket causes a drag force on the respective roller that counter-balances the snap-back force.